REMARKS

Claims 1-11 were previously canceled. As a result, claims 12-90 are pending in the application. Claims 31-55, 72-79 and 81-86 are withdrawn from consideration. Therefore, claims 12-30, 56-71, 80 and 87-90 are currently at issue.

Applicants respectfully request withdrawal of the objection to claims 16, 17 and 21, which are amended hereby to correct the typographical errors noted by the Examiner. Applicants submit that these amendments do not add any new matter, are not made for patentability purposes and do not narrow the claims as originally presented. However, applicants appreciate the Examiner's careful reading of the claims and the Examiner's pointing out of these minor errors.

Claim 80 is amended hereby to specify the apparatus being claimed as one of an input/output (I/O) device or a field device to keep this claim of the same scope as (but not more narrow than) the originally submitted independent claims separately drawn to field devices and I/O devices. Applicants submit that these amendments do not add any new matter, and are not made for patentability purposes, but are made merely to keep the scope of the claims commensurate with the originally filed claims for which the inventors have previously signed a declaration.

Applicants respectfully request withdrawal of the objection to the abstract of the disclosure. The abstract of the disclosure is amended hereby to be more particularly directed to the elected set of claims, and is now less than 150 words in compliance with MPEP § 608.01(b). No new matter has been added by this amendment.

Applicants respectfully traverse the rejection of claims 12-13, 18-20, 28, 56-57, 62-65, 80 and 87-88 as anticipated by Safadi (U.S. Patent No. 5,379,278) and respectfully traverse the rejections of claims 14-17, 21-27, 29-30, 58-61, 66-71 and 89-90 as obvious over

Safadi in view of one or more of Yap (U.S. Patent No. 6,073,193), Lee et al. (U.S. Patent No. 6,615,301), what the examiner has referred to as the Applicant Admitted Prior Art (AAPA), and Kato et al. (U.S. Patent No. 6,397,277), collectively referred to as the cited art. Reconsideration and withdrawal of these rejections is respectfully requested.

Each of claims 12-30, 80 and 87-90 recites an input/output (I/O) device or a field device having an interface for communicating on a bus along with other such devices and a device processor that performs fault detection for the I/O or field device and that, upon detection of a potential device fault, severs the communication link with the bus. Likewise, each of claims 56-71 recites a method for use with an I/O device that severs a communication link with a bus on which the I/O device communicates when a device processor of the I/O device detects a potential device fault in the I/O device. Simply put, none of Safadi, Yap, Lee et al., the AAPA or Kato et al. discloses or suggests providing fault detection in an I/O device or a field device and severing a communication connection between the I/O device or the field device and the bus to which it is connected when a potential fault is detected.

Contrary to the examiner's contention, Safadi does not disclose severing of a communication connection between an I/O device or a field device and the bus on which it and other devices are connected in response to a detected device fault within the I/O device or the field device. Instead, Safadi discloses a known system in which a controller, which is connected through a communication network (i.e., the UCN 14, NIM 602 and LCN 120 of Fig. 1) to one or more user interface devices and other devices in a process control network, operates to interrupt its connection with the communication network upon the detection of a communication error at the input of the controller. While, as is known and is common, the Safadi controller is connected to one or more I/O devices via a bus (see Safadi, Fig. 2 in which Controller-A 30 and Controller-B 40 are connected to I/O modules 21-A to 21-D via

buses 22A and 22b) and in which the I/O devices are connected to field devices (see, Safadi, Fig. 2), the Safadi disclosure is limited to disconnecting the controller from the network 14 on which the controller is connected to the rest of the process control network 11. Safadi simply does not disclose or suggest that an I/O device or a field device can or should disconnect itself from a bus on which it is connected for any reason, much less in response to a detected or potential fault within the I/O device or the field device. In fact, none of the devices connected to the bus 22 of Safadi, i.e., the controller 30, 40 or the I/O devices 21, disconnects from the bus 22, which communicatively connects the I/O devices 21 together.

The Examiner's reference to the "Process Controller-20" depicted in Fig. 1 of Safadi as providing disclosure of an I/O device that disconnects itself from a bus is simply incorrect. While the box labeled as "Process Controller-20" includes lines coming out of the bottom thereof indicating signals going to field devices, it is clear from the detailed description of Fig. 2 that the box 20 of Fig. 1 is a generic depiction of system including separate redundant process controllers (Controller-A 30 and Controller-B 40) interconnected through a redundant bus (22A and 22B) to multiple I/O devices 21-A to 21-D which, in turn, are connected to the field devices. Fig. 3 and the description associated therewith provides a detailed depiction and discussion of the controllers 30 and 40 of Fig. 2 (and not of the I/O devices 21), and this discussion makes it clear that the TBC 61 of the controller 30, 40 operates to disable communications on the communication network UCN 14 in response to a problem in communications. Thus, it is the Safadi controller that disconnects from a communication network, not the I/O devices or any field devices. In fact, the UCN 14 from which the controller disconnects, is connected between the controllers 30 and 40 and the rest of the process network 11 (Fig. 1) and is therefore not even a communication network connected to an I/O device or a field device. Thus, while Safadi appears to disclose preventing a controller

from communicating on a communication network connecting that controller to the rest of a process plant network, Safadi does not disclose that it is possible or even desirable to cause one or more of the I/O devices 21 to sever its communication connection with the bus 22 (either 22A or 22B) for any reason. Still further, Safadi does not discuss the operation of the field devices referred to therein, much less disclose or suggest that it might be desirable or even possible to sever the communication connections between these field devices and the communication lines to which they are connected. In any event, because Safadi does not disclose a system that severs a communication connection between an I/O device or a field device and the bus to which it is connected, it follows that Safadi cannot anticipate any of claims 12-13, 18-20, 28, 56-57, 62-65, 80 and 87-88.

Still further, no combination of Safadi with Yap, Lee et al., the AAPA and Kato et al. can render any of the claims at issue obvious. First of all, none of Yap, Lee et al., the AAPA or Kato et al. provides the disclosure missing in Safadi, nor has the Examiner cited them for this purpose. In particular, while each of Yap, Lee et al. and Kato et al. are generally directed to computer related communication devices, these documents do not disclose a process control system, much less the use of I/O devices or field devices within a process control system. Still further, it does not appear that any of these documents discloses the severing of a communication connection based on the detection of a device fault within any type of device, much less a process control device such as an I/O device or a field device. As a result, none of Yap, Lee et al. or Kato et al. provides any disclosure or suggestion of an I/O device or a field device that severs its connection with a bus upon the detection of a device fault. Likewise, the AAPA, which merely discusses one possible effect of an I/O device undergoing a failure on a bus, does not provide this disclosure.

Still further, Safadi does not provide any motivation or suggestion for severing communications with a bus within an I/O device or a field device based on the detection of a fault within the I/O device or the field device. In particular, the Safadi disclosure is completely directed to the situation which arises when redundant controllers are connected to redundant buses, which gives rise to a "jabber" condition in the controller when both busses fail. (See, Safadi, Col. 4, lines 14-43). The claimed device and method, on the other hand, is for example used to prevent a faulty I/O device or a field device from preventing other such devices from communicating on the bus when the device fails. Safadi does not recognize this problem, much less provide any suggestion or motivation for correcting this problem.

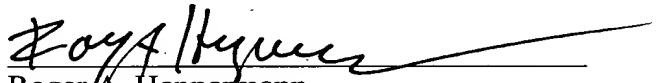
It is clear that the prior art must make a suggestion of or provide an incentive for a claimed combination of elements to establish a *prima facie* case of obviousness. *See, In re Oetiker*, 24 U.S.P.Q.2d 1443, 1446 (Fed. Cir. 1992); *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. 1985). This principle holds true even if the applied art could be modified to produce the invention recited by the pending claims. *See, In re Mills,* 16 U.S.P.Q.2d 1430, 1432 (Fed. Cir. 1990); *In re Gordon,* 221 U.S.P.Q. 1125, 1127 (Fed. Cir. 1984) ("The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification.") Because each of Safadi, Yap, Lee et al., the AAPA and Kato et al. fails to disclose or provide any motivation for severing a communication connection between an I/O device or a field device and the bus to which it is connected within a process control system, it follows that no combination of these documents can render any of the claims 12-30, 56-71, 80 and 87-90 obvious.

CONCLUSION

For the foregoing reasons, applicants respectfully request reconsideration and withdrawal of the rejections and allowance of claims 12-30, 56-71, 80 and 87-90. If there are matters that can be discussed by telephone to further the prosecution of this application, applicants respectfully request that the Examiner call its attorney at the number listed below.

June 9, 2005

Respectfully submitted,

By: 

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